

Application No. 10/811,249
Attorney Docket No: 25307A

Remarks

Claim 1 has been amended to incorporate the recitation of claim 3. The features of claim 3 are found at least in paragraph [0022]. Claims 3 and 17 – 20 have been canceled without prejudice. Support for the amendments to claim 11 is found at least in paragraphs [0023], [0028], and [0031]. New claim 21 is supported at least by paragraph [0025] and original claim 1. Support for new claim 22 is found at least in paragraph [0023] and original claim 4. New claim 23 is supported at least by paragraph [0024] and original claim 7. Support for new claims 24 and 25 is found at least in paragraph [0022] and original claims 2 and 3 respectively. No question of new matter arises and entry of the amendments and new claims is respectfully requested.

Claims 1, 3 – 16, and 21 – 25 are before the Examiner for consideration.

Rejection under 35 U.S.C. §103(a)

The Examiner has rejected claims 1 – 10 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2001/0011780 to Knutsson ("Knutsson") in view of U.S. Patent No. 5,317,037 to Golden *et al.* ("Golden"). In particular, the Examiner admits that Knutsson does not teach using sugar as the binder material. In this regard, Golden is cited as allegedly teaching the use of sugar as a glass binder for a forming a glass fiber composite. The Examiner concludes that it would have been obvious to one of ordinary skill in the art to use sugar as the binder in the method of Knutsson in order to produce a biodegradable material.

Initially, Applicant submits that claim 3 has been canceled without prejudice, thereby rendering the rejection of this claim moot.

Additionally, Applicant respectfully directs the Examiner's attention to the amendments made to independent claim 1 and submits that claim 1, as amended, defines a method of forming a preform for a muffler that is not taught or suggested within Knutsson and Golden, either alone or in combination. Knutsson teaches preforms formed of continuous glass fiber strands that are used as sound deadening materials in engine exhaust mufflers. (*See, e.g.*, Abstract). The process used to form a preform includes feeding continuous glass fiber strands into a cavity that is made of perforated shells that have the shape of the muffler to be filled. (*See, e.g.*, paragraphs [0005] and [0018]). Air blown through a nozzle in the perforated preform shell blows apart and entangles the glass strands to form a wool-like product. (*See, e.g.*, paragraphs [0005] and [0018]). A powder binder is added with the continuous glass fibers through the nozzle. (*See, e.g.*, paragraphs [0005] and [0018] and claims 1 and 2). The binder is any thermoplastic or thermoset resin that can be produced or reduced into a powder. (*See, e.g.*, paragraph [0014] and claim 6). After the binder and glass fibers have been inserted into the perforated shell, hot air is blown through the perforated shell to melt the binder and bond the glass fibers together. (*See, e.g.*, paragraphs [0005] and [0019] and claims 1 and 9). Cool or

Application No. 10/811,249
Attorney Docket No: 25307A

ambient air is then passed through the perforated shell to cool the preform and set the binder so that the preform can be removed and used. (*See, e.g.*, paragraphs [0005] and [0019] and claims 1 and 10.).

Golden discloses a melt-moldable composition that disintegrates in the presence of moisture and decomposes or degrades to produce components that are inert or beneficial to the ground. (*See, e.g.*, column 2, lines 24 – 27 and 48 – 52). The composition can be shaped into useful articles that have a mechanical strength that is sufficient for its intended use (*e.g.*, golf tees, golf pencils, and clay pigeons), but which allows the article to disintegrate and decompose after it is broken. (*See, e.g.*, column 2, lines 28 – 32 and column 3, lines 11 – 21). The composition includes a binder that is preferably a natural substance such as sugar. (*See, e.g.*, column 2, lines 56 – 60). Water or synthetic polymers may be used together with the natural binders and chemical additives may be added to accelerate the decomposition of the article. (*See, e.g.*, column 2, lines 60 – 68 and column 3, lines 31 – 38). The composition further includes biodegradable reinforcing fibers, preferably cellulosic fibers from wood pulp, cotton, linen, viscose rayon, and sisal materials. (*See, e.g.*, column 3, lines 39 – 42). Inorganic fibers such as wollastonite and glass fibers may also be employed in the composition. (*See, e.g.*, column 2, line 55 and column 3, lines 44 – 45).

Applicant respectfully submits that neither Knutsson nor Golden teach or suggest a method of forming a muffler preform where glass strands are texturized by separating the glass strands into individual glass fibers prior to feeding the glass fibers into a preform mold to form a muffler preform. Applicant submits that, unlike the method claimed in amended claim 1, Knutsson specifically teaches that the glass strands are blown apart and entangled in a cavity formed of perforated shells having the shape of the muffler to be filled. (*See, e.g.*, paragraphs [0005] and [0018] of Knutsson). As recited in amended claim 1, the glass strands are texturized into glass fibers prior to feeding the glass fibers into a preform mold. Thus, the glass strands of the presently claimed invention are not texturized in the preform mold (*i.e.*, cavity) as taught by Knutsson. With respect to Golden, Applicant submits that Golden merely teaches a moldable composition that includes mixing reinforcement fibers and binders. Golden is silent regarding any teaching or suggestion of texturizing glass strands into individual glass fibers as claimed. In fact, there is no disclosure of any kind within Golden of texturizing glass strands.

Additionally, Applicant respectfully submits that to evaluate the obviousness or non-obviousness of an invention, both the prior art reference(s) and the claimed invention as a whole must be considered. (*See, e.g.*, *Manual of Patent Examining Procedure*, Patent Publishing, LLC, Eighth Ed., Rev. 3, August 2005, §2141.02 citing *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983) and *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983)). Although Golden teaches that natural substances such as sugar, polydextrose, maltose, and gelatin may be used as a binder, Golden as a whole teaches the use of the fibers and binder to form a

Application No. 10/811,249
Attorney Docket No: 25307A

biodegradable product. (*See, e.g.*, column 2, lines 56 – 60). Moreover, the Abstract of Golden clearly states that the fibrous material may be cellulose and/or mineral fibers which provide the attributes of reinforcement and degradability. If the muffler preform of claim 1 were to disintegrate or biodegrade, as is taught by Golden, the sound deadening properties of the muffler would be lost and the invention would be rendered useless for its intended purpose. Thus, it is also submitted that one of ordinary skill in the art would simply not glean from the teachings of Golden to apply a sugar binder to a preform mold and form a muffler preform as recited in amended claim 1.

In addition, Applicant submits that the cited prior art references teach away from the invention claimed in amended independent claim 1. For example, Knutsson teaches blowing apart and entangling glass strands in a perforated cavity that has the shape of the muffler to be filled. (*See, e.g.*, paragraphs [0005] and [0018]). This is the opposite of the method of claim 1 in which the glass strands are texturized into individual glass fibers prior to feeding the glass fibers into a preform mold. Thus, Applicant submits that one of ordinary skill in the art would be led away from texturizing the glass strands (*e.g.*, blowing the glass strands apart) prior to feeding the glass fibers into the preform mold based on the teachings of Knutsson. In addition, it is respectfully submitted that one of ordinary skill in the art would not arrive at the method claimed in claim 1 based on the teachings of Golden because Golden is silent with respect to texturizing glass strands. Additionally, in view of the above, Applicant respectfully submits that the combination of the teachings of Knutsson and Golden would not result in the inventive method of claim 1.

Further, Applicant submits that there is no motivation for one of skill in the art to arrive at the presently claimed invention based on the disclosures of Knutsson and Golden. To establish a *prima facie* case of obviousness, there must be some motivation, either within the reference or in the knowledge of those of skill in the art, to modify the reference or combine the references' teachings, there must be a reasonable expectation of success, and the prior art references must meet all of the claim limitations. (*See, e.g., Manual of Patent Examining Procedure*, Patent Publishing, LLC, Eighth Ed., Rev. 3, August 2005, §2142). One of ordinary skill in the art would not be motivated to arrive at the presently claimed process for forming a muffler that includes texturizing glass strands by separating the glass strands into individual glass fibers prior to feeding the glass fibers into a preform mold, feeding sugar and the glass fibers into the preform mold, heating the preform mold to a temperature sufficient to melt the sugar and adhere to the glass fibers, and cooling the preform mold to bind the sugar-coated glass fibers and form a preform. As discussed above, neither Knutsson nor Golden teach or suggest texturizing glass strands into individual glass fibers prior to feeding the glass fibers into a preform mold. Without some teaching or suggestion, there can be no motivation, and without motivation, there can be no *prima facie* case of obviousness.

Application No. 10/811,249
Attorney Docket No: 25307A

In view of the above, Applicant respectfully submits that amended claim 1 is patentably distinguishable over Knutsson and Golden, either alone or in combination. Because claims 2 and 4 – 10 are dependent upon independent claim 1, which, as discussed above, is not taught within the Examiner's cited references, either alone or in combination, claims 2 and 4 – 10 are submitted to be non-obvious and patentable.

Thus, Applicant respectfully submits that claims 1 – 2 and 4 – 10 are not obvious over Knutsson in view of Golden and respectfully requests reconsideration and withdrawal of this rejection.

Rejection under 35 U.S.C. §103(a)

The Examiner has rejected claim 11 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2001/0011780 to Knutsson ("Knutsson") in view of U.S. Patent No. 3,286,004 to Hill *et al* ("Hill"). The Examiner asserts that Knutsson teaches the method of the present invention with the exception of coating the surface of a mold with a binder. In this regard, Hill is cited as teaching the coating of a mold cavity with a thermosetting resin binder and then spraying reinforcing fibers on top of the binding resin layer. The Examiner concludes that it would have been obvious to one of skill in the art to modify the method of Knutsson to include the step of applying a curing binder prior to applying the glass fibers. The Examiner asserts that one of skill in the art would have been motivated to do so in order to provide a fluffy, low density mat containing sufficient resin to act as a binder.

In response to this rejection, Applicant respectfully directs the Examiner's attention to the amendments made to independent claim 11, and submits that claim 11 defines a method of forming a preform that is not taught or suggested within Knutsson and Hill, either alone or in combination. With respect to Knutsson, Applicant submits that the method of making the preform taught by Knutsson is discussed in detail above, and for purposes of brevity, will not be discussed in detail with respect to this rejection. Hill teaches a method of making plastic articles that include a fiber-reinforced plastic shell and a resin foam core. (See, e.g., column 1, lines 10 – 12). First, a coating composition containing a polyester resin, a suitable catalyst, and a pigment is sprayed onto the mold surface. (See, e.g., column 3, lines 38 – 41). The mold is heated to cure or partially cure the first coating composition. (See, e.g., column 4, lines 67 – 70). After this first coating layer has at least partially cured, a second spray-on layer formed of reinforcement fibers and binder is applied to the first coating layer. (See, e.g., column 3, lines 43 – 47). The binder is preferably a polyester resin for compatibility and adhesion to the initially applied coating layer. (See, e.g., column 3, lines 43 – 47). A pressure transfer film is applied to the layer of fibers and binder by spraying a webbing lacquer onto the second layer. (See, e.g., column 3, lines 58 – 61). As soon as the pressure transfer film is

Application No. 10/811,249
Attorney Docket No: 25307A

applied, the two mold sections are brought together and a foamable resin mixture is introduced into the closed mold. (See, e.g., column 4, lines 17 – 21). An exothermic reaction of the resin mixture causes the resin mass to expand and fill the mold. (See, e.g., column 4, lines 37 – 39).

Applicant submits that neither Knutsson nor Hill teach or suggest a method of forming a preform that includes placing a binder on internal walls of a preform mold prior to the addition of continuous glass strands, adding the continuous glass strands to the preform mold, and then curing the binder to bond glass fibers positioned adjacent to the internal walls together, where the bonded glass fibers form an encapsulating shell surrounding unbound glass fibers positioned within the preform. Hill specifically teaches curing the coating composition positioned adjacent to the wall of the mold by heat prior to any addition of reinforcement fibers or binder. In addition, Hill clearly discloses that the reinforcement fibers and binder are added together after the first coating composition (*i.e.*, a polyester resin, a suitable catalyst, and a pigment) has been applied to the walls of the mold. Additionally, Applicant submits that both Knutsson and Hill are silent regarding the addition of a sugar binder to the internal walls of the preform mold prior to the addition of continuous glass strands to form a preform, or of heating the preform mold once the glass strands and binder have been supplied to the preform mold and form an encapsulating shell of bound fibers.

In addition, Applicant submits that there is no motivation for one of skill in the art to arrive at the presently claimed invention, namely, a method of forming a preform that includes placing a binder on the internal walls of a preform mold, adding continuous strands to the mold, and curing the binder to bond fibers positioned adjacent to the walls of the preform mold to form an encapsulating shell surrounding unbound glass fibers. As discussed above, to establish a *prima facie* case of obviousness, there must be some motivation, either within the reference or in the knowledge of those of skill in the art, to modify the reference or combine the references' teachings, there must be a reasonable expectation of success, and the prior art references must meet all of the claim limitations. (See, e.g., *Manual of Patent Examining Procedure*, Patent Publishing, LLC, Eighth Ed., Rev. 3, August 2005, §2142). Applicant submits that one of ordinary skill in the art would not be motivated to arrive at the presently claimed process that includes feeding a sugar binder onto the walls of a preform mold prior to the addition of continuous glass strands and then curing the binder to form an encapsulating shell of bound glass fibers that surround unbound glass fibers. As discussed above, neither Knutsson nor Hill teach or suggest adding a sugar binder prior to adding continuous glass strands and then heating the preform mold to form an encapsulating shell of bound fibers. In fact, both references teach the addition of a binder and glass (reinforcement) fibers simultaneously into the preform mold. In addition, Applicant submits that both Knutsson and Hill are silent regarding the addition of a sugar binder to a preform mold prior to the addition of glass fibers to form a preform. Without some

Application No. 10/811,249
Attorney Docket No: 25307A

teaching or suggestion, there can be no motivation, and without motivation, there can be no *prima facie* case of obviousness.

Further, Applicant submits that the cited prior art references teach away from the invention claimed in amended independent claim 11. For example, Knutsson and Hill both teach the addition of glass (reinforcement) fibers to the mold with the binder and do not teach or suggest the separate addition of a binder prior to the addition of glass fibers. Thus, the methods of Knutsson and Hill are opposite to the method of the presently claimed invention in which the sugar binder is specifically added as a separate step prior to the addition of the glass fibers. Therefore, one of skill in the art would be led away from adding the binder and the glass separately to form a preform based on the teachings of Knutsson and Hill. In addition, Applicant submits that blowing the binder into the preform shell with the glass strands as taught by Knutsson and Hill results in a distribution of the binder throughout the internal cavity of the preform. Further, heating the preform mold of Knutsson (or Hill) with such a distribution of binder throughout the preform cavity would result in the glass fibers binding to each other throughout the preform. As a result, the glass fibers and binder of Knutsson (or Hill) would not form an encapsulating shell of bound fibers surrounding unbound glass fibers as required by claim 11. In addition, Applicant submits that, in view of the above, the combination of the teachings of Knutsson and Hill would not result in the invention claimed in claim 11.

In view of the above, Applicant submits that claim 11 is not obvious over Knutsson and/or Hill and respectfully requests that this rejection be reconsidered and withdrawn.

Rejection under 35 U.S.C. §103(a)

The Examiner has rejected claims 12, 13, 15, and 16 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2001/0011780 to Knutsson ("Knutsson") in view of U.S. Patent No. 5,317,037 to Golden *et al.* ("Golden"). In particular, the Examiner admits that Knutsson does not teach using sugar as the binder material. In this regard, Golden is cited as allegedly teaching the use of sugar with a melting temperature in the range of 248 – 347 °F as a glass binder. The Examiner concludes that it would have been obvious to one of ordinary skill in the art to use sugar as the binder in the method of Knutsson in order to produce a biodegradable material.

In response to this rejection, Applicant respectfully directs the Examiner's attention to the amendments made to independent claim 11 and submits that claim 11, as amended, defines a method of forming a preform that is not taught or suggested within Knutsson and Golden, either alone or in combination. With respect to the Examiner's cited references, Applicant submits that the teachings of Knutsson and Golden are discussed in detail above, and for purposes of brevity, will not be discussed in detail with respect to this rejection.

Application No. 10/811,249
Attorney Docket No: 25307A

Applicant submits that neither Knutsson nor Golden teach or suggest a method of forming a preform that includes placing a binder on internal walls of a preform mold prior to the addition of continuous glass strands, adding the continuous glass strands to the preform mold, and then curing the binder to bond glass fibers positioned adjacent to the internal walls, where the bonded glass fibers form an encapsulating shell surrounding unbound glass fibers positioned within the preform. Applicant submits that, unlike the method claimed in amended claim 11, Knutsson specifically teaches the addition of a powdered binder with the continuous glass strands. As recited in amended claim 11, the binder is fed into the preform mold prior to the addition of the continuous glass strands. Thus, the binder of the presently claimed invention is not blown into the preform mold with the continuous glass fiber strands as taught by Knutsson. With respect to Golden, Golden teaches mixing the fibers and binder together using a water mixture. (*See, e.g.*, column 3, lines 54 – 55). Thus, Applicant submits that the method of Golden is vastly different from the method claimed in amended claim 11. Additionally, Applicant submits that both Knutsson and Golden are silent regarding the addition of a binder to the internal walls of the preform mold prior to the addition of continuous glass strands to form a preform, or of heating the preform mold once the glass strands and binder have been supplied to the preform mold to form an encapsulating shell of bound glass fibers.

In addition, Applicant submits that there is no motivation for one of skill in the art to arrive at the presently claimed invention, namely, a method of forming a preform that includes placing a binder on the internal walls of a preform mold, adding continuous strands to the mold, and curing the binder to bond fibers positioned adjacent to the walls of the preform mold to form an encapsulating shell of bonded glass fibers that surround unbound glass fibers. As discussed above, to establish a *prima facie* case of obviousness, there must be some motivation, either within the reference or in the knowledge of those of skill in the art, to modify the reference or combine the references' teachings, there must be a reasonable expectation of success, and the prior art references must meet all of the claim limitations. (*See, e.g., Manual of Patent Examining Procedure*, Patent Publishing, LLC, Eighth Ed., Rev. 3, August 2005, §2142). Applicant submits that one of ordinary skill in the art would not be motivated to arrive at the presently claimed process that includes feeding a binder onto the walls of a preform mold prior to the addition of continuous glass strands and then curing the binder to form an encapsulating shell of bonded glass fibers. As discussed previously, Knutsson and Golden do not teach or suggest adding a binder prior to the addition of continuous glass strands to form an encapsulating shell of bound fibers surrounding unbound glass fibers. In addition, Applicant submits that both Knutsson and Golden are silent with respect to any teaching of the addition of a binder to a preform mold prior to the addition of glass fibers to form a preform. Without some teaching or suggestion, there can be no motivation, and without motivation, there can be no *prima facie* case of obviousness.

Application No. 10/811,249
Attorney Docket No: 25307A

Further, Applicant submits that the cited prior art references teach away from the invention claimed in amended independent claim 11. For example, Knutsson teaches the addition of glass fibers to the preform mold together with the binder and do not teach or suggest the separate addition of a binder prior to the addition of the glass fibers. Therefore, the methods of Knutsson and Golden are opposite to the method of the presently claimed invention in which the binder is specifically added as a separate step prior to the addition of the glass fibers. Applicant submits that one of skill in the art would be led away from adding the binder and the glass separately to form a preform based on the teachings of Knutsson and Golden. In addition, Applicant submits that blowing the binder into the preform shell with the glass strands as taught by Knutsson would result in a distribution of the binder throughout the internal cavity of the preform mold. Further, heating the preform mold of Knutsson with such a distribution of binder throughout the preform cavity would result in the glass fibers binding to each other throughout the preform. As a result, the glass fibers and binder of Knutsson would not form an encapsulating shell of bound fibers surrounding unbound glass fibers as required by claim 11. In addition, Applicant submits that, in view of the above, the combination of the teachings of Knutsson and Golden would not result in the presently claimed invention of claim 11.

In view of the above, Applicant submits that claim 11 is not obvious over Knutsson and/or Golden. Because claims 12, 13, 15, and 16 are dependent upon claim 11, which, as discussed above, is not taught within the Examiner's cited references, either alone or in combination, claims 12, 13, 15, and 16 are also submitted to be non-obvious and patentable. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Rejection under 35 U.S.C. §103(a)

The Examiner has rejected claim 14 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2001/0011780 to Knutsson ("Knutsson") in view of U.S. Patent No. 3,286,004 to Hill *et al.* ("Hill"), and further in view of U.S. Patent No. 5,317,037 to Golden *et al.* ("Golden"), and further in view of U.S. Patent No. 6,319,444 to Kirk *et al.* ("Kirk"). The Examiner admits that Knutsson does not teach heating the preform mold prior to placing the binder material on the internal walls of a mold. It is asserted that Kirk teaches preheating a mold prior to a molding process. The Examiner concludes that it would have been obvious to one of skill in the art to use Kirk's teachings in the method of Knutsson in view of Golden to reduce the wait time required to heat up the mold.

In response to this rejection, Applicant respectfully directs the Examiner's attention to the amendments made to independent claim 11 and submits that claim 11 defines a method of forming a preform that is not taught or suggested within Knutsson, Hill, Golden, or Kirk, either alone or in any combination. With respect to Knutsson, Hill, and Golden, Applicant submits that the teachings of Knutsson, Hill, and Golden are discussed in detail above, and for purposes of brevity, will not be

Application No. 10/811,249
Attorney Docket No: 25307A

discussed in detail with respect to this rejection: Kirk teaches a method of forming an insulting material that includes advancing a multifilament strand of continuous filaments having thereon a binder into a mold and then molding the continuous filament wool with the binder to form an insulation material. (*See, e.g.*, column 3, lines 27 – 34, column 4, lines 9 – 16, and column 6, lines 50 – 53).

Applicant submits that Knutsson, Hill, Golden, and Kirk do not teach or suggest a method of forming a preform that includes placing a binder on internal walls of a preform mold prior to the addition of continuous glass strands, adding the continuous glass strands to the preform mold, and then curing the binder to bond glass fibers positioned adjacent to the internal walls, where the bonded glass fibers form an encapsulating shell surrounding unbound glass fibers. Initially, Applicant submits that, unlike the method claimed in amended claim 11, Knutsson specifically teaches the addition of a powdered binder together with continuous glass strands. As recited in amended claim 11, the binder is fed into the preform mold prior to the addition of the continuous glass strands. Thus, the binder of the presently claimed invention is not blown into the preform mold with the continuous glass fiber strands as taught by Knutsson.

With respect to Golden, Golden teaches mixing the reinforcement fibers and binder together using a water mixture. (*See, e.g.*, column 3, lines 54 – 55). Thus, Applicant submits that the method of Golden is vastly different from the method claimed in amended claim 11. Hill specifically teaches curing the coating composition positioned adjacent to the wall of the cavity by heat prior to the addition of the reinforcement fibers and binder. In addition, Hill clearly discloses that the reinforcement fibers and binder are added together after the first coating composition (*i.e.*, a polyester resin, a suitable catalyst, and a pigment) has been applied to the walls of the mold. Kirk specifically teaches that the binder is applied onto the glass fibers and fed into a mold. Thus, the binder and the fibers are added to the mold simultaneously in the method of Kirk, which is unlike the method of the present invention in which the binder and glass strands are consecutively added to the preform mold. Additionally, Applicant submits that Knutsson, Hill, Golden, and Kirk are silent regarding the addition of a binder to the internal walls of a preform mold prior to the addition of continuous glass strands to form a preform, or of heating the preform once the glass strands and binder have been supplied to the preform mold to form an encapsulating shell of bound fibers. Further, there is no teaching anywhere within the Examiner's cited references of forming a preform having an encapsulating shell of bound fibers surrounding unbound glass fibers as required by claim 11.

Additionally, Applicant submits that the cited prior art references teach away from the invention claimed in amended independent claim 11. For example, Knutsson, Hill, Golden, and Kirk teach the addition of glass (reinforcement) fibers together with the binder and do not teach or suggest the separate addition of a binder to a preform mold prior to the addition of the glass fibers. Applicant

Application No. 10/811,249
Attorney Docket No: 25307A

submits that the teachings of Knutsson, Hill, Golden, and Kirk are opposite to the method of the presently claimed invention in which the binder is specifically added in a separate step prior to the addition of the glass fibers. Therefore, Applicant submits that one of skill in the art would be led away from adding the binder and the glass separately to form a preform based on the teachings of the Examiner's cited references. In addition, Applicant submits that blowing the binder into the preform shell with the glass strands as taught by Knutsson and Hill or simultaneously adding the glass and binder as taught by Golden and Kirk would result in a distribution of the binder throughout the internal cavity of a preform. Heating the preform with such a distribution of binder throughout the preform cavity and intermingled with the glass fibers would result in the glass fibers binding to each other throughout the preform. As a result, the glass fibers and binder would not form an encapsulating shell of bound fibers surrounding unbound glass fibers as required by claim 11. In addition, Applicant submits that, in view of the above, the combination of the teachings of Knutsson, Hill, Golden, and Kirk would not result in the invention claimed in claim 11.

In addition, Applicant submits that there is no motivation for one of skill in the art to arrive at the presently claimed invention, namely, a method of forming a preform that includes placing a binder on the internal walls of a preform mold, adding continuous strands to the mold, and curing the binder to bond fibers positioned adjacent to the walls of the preform mold to form an encapsulating shell of bonded glass fibers. As discussed previously, to establish a *prima facie* case of obviousness, there must be some motivation, either within the reference or in the knowledge of those of skill in the art, to modify the reference or combine the references' teachings, there must be a reasonable expectation of success, and the prior art references must meet all of the claim limitations. (See, e.g., *Manual of Patent Examining Procedure*, Patent Publishing, LLC, Eighth Ed., Rev. 3, August 2005, §2142). Applicant submits that one of ordinary skill in the art simply would not be motivated to arrive at the presently claimed process that includes feeding a binder onto the walls of a preform mold prior to the addition of continuous glass strands and then curing the binder to form an encapsulating shell of bonded glass fibers. As discussed above, none of Knutsson, Hill, Golden, or Kirk teach or suggest adding a binder prior to adding continuous glass strands to form an encapsulating shell of bound fibers surrounding unbound glass fibers. In addition, Applicant submits that Knutsson, Hill, Golden, and Kirk are silent as to the addition of a binder to a preform mold prior to the addition of glass fibers to form a preform. Without some teaching or suggestion, there can be no motivation, and without motivation, there can be no *prima facie* case of obviousness.

In view of the above, Applicant submits that claim 11 is not obvious over Knutsson, Hill, Golden, and/or Kirk. Because claim 14 is dependent upon independent claim 11, which, as discussed above, is not taught within the Examiner's cited references, either alone or in combination, claim 14 is

Application No. 10/811,249
Attorney Docket No: 25307A

also submitted to be non-obvious and patentable. Accordingly, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

Newly Added Claims 21 - 25

As shown above, Applicant has added new claims 21 - 25 by amendment. Because claims 3 and 17 - 20 have been canceled (5 claims in total) and claims 21 - 25 have been added (5 claims in total), the total number of claims Applicant is submitting for examination is not greater than the total number of claims previously presented and paid for. Applicant, therefore, respectfully submits that no additional filing fees are required for newly added claims 21 - 25. In addition, Applicant respectfully submits that there are no fees required for new independent claim 21 because claim 17, which was canceled from this application, was also an independent claim. Thus, the total number of independent claims present and paid for in the application has not changed. Furthermore, because support for newly added claims 21 - 25 is found in throughout the specification, as identified in the opening paragraph of the Remarks, Applicant respectfully submits that these newly added claims do not contain any new matter.

In addition, Applicant respectfully submits that none of Knutsson, Golden, Hill, and Kirk, either alone or in combination, teach or suggest a method of forming a preform for a muffler having a predetermined shape that includes the steps of (1) feeding sugar and glass fibers into a preform mold, (2) heating the preform mold to a temperature sufficient to melt the sugar and adhere the glass fibers to form sugar-coated glass fibers, and (3) cooling the preform mold to bind the sugar-coated glass fibers together and form a preform, where the preform includes approximately 2 - 10% by weight sugar.

Additionally, Applicant submits that there is no motivation for one of skill in the art to arrive at the presently claimed invention based on the disclosures of the Examiner's cited references. To establish a *prima facie* case of obviousness, there must be some motivation, either within the reference or in the knowledge of those of skill in the art, to modify the reference or combine the references' teachings, there must be a reasonable expectation of success, and the prior art references must meet all of the claim limitations. (See, e.g., *Manual of Patent Examining Procedure*, Patent Publishing, LLC, Eighth Ed., Rev. 3, August 2005, §2142). One of ordinary skill in the art would not be motivated to arrive at the process claimed in independent claim 21 because, as discussed above, none of Knutsson, Golden, Hill, and/or Kirk teach or suggest a preform that includes sugar in an amount of approximately 2 - 10% by weight of the preform. Without some teaching or suggestion, there can be no motivation, and without motivation, there can be no *prima facie* case of obviousness (and no case of anticipation).

Application No. 10/811,249
Attorney Docket No: 25307A

In view of the above, newly added claims 21 – 25 are respectfully submitted to be non-obvious and patentably distinct over Knutsson, Golden, Hill, and Kirk, either alone or in any combination.

Conclusion

In light of the above, Applicant believes that this application is now in condition for allowance and therefore requests favorable consideration.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

If necessary, the Commissioner is hereby authorized to charge payment or credit any overpayment to Deposit Account No. 50-0568 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

Date: November 22, 2006

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